High Permeability Precision Alloy

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Victory
- Model Number: Permalloy 80
- Minimum Order Quantity: 50
- Price: $25-$40
- Packaging Details: Standard Export Wooden Cases Ex.Gross Weight Under 20kg=Carton Box/Gross Weight over 20 kg=Plywood Box Or as per Request
- Delivery Time: 5-21 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 200 tons per month

Product Specification

- Material: NiFe
- Certificate: ISO9001
- Shape: Wire, Strip, Foil, Sheet
- Resistivity: 0.56
- Density: 8.75g/cm3
- Size: Customized
- Standard: GB/ASTM/AISI/ASME
- Condition: Bright, Annealed, Soft
- Application: Industrial Magnet
- Curie Point: 400℃
- HCR: 30
- Feature: High Initial Permeability
- Highlight: **High Permeability Precision Alloy**, **NiFe Precision Alloy**, **ASTM permalloy 80**

Our Product Introduction

Product Description

High Permeability Soft Magnetic Alloy

Permalloy is a type of magnetic alloy that is composed of nickel and iron. Specifically, it is an alloy that contains about 20% iron and 80% nickel. This combination of metals gives permalloy unique properties that make it useful for a variety of industrial applications.

One of the key properties of permalloy is its high magnetic permeability. This means that it is able to conduct magnetic fields very effectively, which makes it useful in devices such as transformers and magnetic sensors. Additionally, permalloy has a low coercivity, which means that it takes very little energy to magnetize it. This property makes permalloy ideal for use in devices that require low power consumption.

Another important property of permalloy is its near-zero magnetostriction. Magnetostriction refers to the tendency of a material to change shape when exposed to a magnetic field. In many materials, this can cause significant changes in their magnetic properties, which can be problematic in industrial applications. However, permalloy's low magnetostriction makes it much more stable and predictable in these types of situations.

Permalloy also exhibits significant anisotropic magnetoresistance, which means that its electrical resistivity varies depending on the strength and direction of an applied magnetic field. This property makes permalloy useful in devices such as magnetic read heads for hard drives and other data storage devices.

In terms of its crystal structure, permalloy typically has a face centered cubic structure with a lattice constant of approximately 0.355 nm when the nickel concentration is around 80%. This crystal structure gives permalloy its unique magnetic properties and makes it ideal for use in a variety of industrial applications.

Overall, permalloy is a versatile and useful material that has a wide range of applications in various industries. Its unique combination of properties make it an attractive choice for many different types of devices and systems.

Applications

High sensitivity and small power transformers, magnetic amplifiers, relays, chokes, magnetic heads for magnetic recording devices, magnetic shields, various tape wound cores, cut cores, and laminated cores used in weak magnetic fields.

Material	C	P	S	Mn	Si	Ni	Cr	Co	Mo	Cu
	Max									
Permalloy80	0.03	0.020	0.020	0.3-0.6	0.15-0.30	79.0-81.0	-	-	4.8-5.2	≤0.2

rial	Shape	Class	Thickness or Diameter mm	Magnetic permeability in 0.08A/m magnetic field intensity μ0.4(mH/m)	Maximum permeability μm(mH/m)	Coercivity(under saturation magnetic induction)Hc/A·m-1
				not less than		no greater than
Permalloy80	Cold rolled strip	I	0.03-0.04	18000(22.5)	80000(100)	3.6
			0.05-0.09	28000(35)	110000(137.5)	2.4
			0.10-0.19	30000(37.5)	150000(187.5)	1.6
			0.20-0.34	40000(50)	180000(225)	1.2
			0.35-1.00	50000(62.5)	250000(312.5)	0.8
			1.10-2.50	40000(50)	150000(187.5)	1.2
		II	0.03-0.04	30000(37.5)	110000(137.5)	2.4
			0.05-0.09	40000(50)	140000(175)	1.6
			0.10-0.19	50000(62.5)	180000(225)	1.2
			0.20-0.34	60000(75)	200000(250)	1.0
			0.35	55040(68.8)	260000(325)	0.7
	Hot rolled tape		4.5-20	30000(37.5)	100000(125)	1.6
	Hot forged bar		20-100	30000(37.5)	100000(125)	1.6

Material	Shape	Class	Thickness or Diameter mm	Magnetic permeability in 0.08A/m magnetic field intensity μ0.4(mH/m)	Maximum permeability μm(mH/m)	Coercivity(under saturation magnetic induction)Hc/A·m-1	Saturation magnetic induction Bs/T
				not less than		no greater than	

Permalloy 80	Cold rolled strip	I	0.03-0.04	18000(22.5)	80000(100)	3.6	0.70
			0.05-0.09	28000(35)	110000(137.5)	2.4	0.70
			0.10-0.19	30000(37.5)	150000(187.5)	1.6	0.70
			0.20-0.34	40000(50)	180000(225)	1.2	0.70
			0.35-1.00	50000(62.5)	250000(312.5)	0.8	0.70
			1.10-2.50	40000(50)	150000(187.5)	1.2	0.70
		Ⅱ	0.03-0.04	30000(37.5)	110000(137.5)	2.4	0.70
			0.05-0.09	40000(50)	140000(175)	1.6	0.70
			0.10-0.19	50000(62.5)	180000(225)	1.2	0.70
			0.20-0.34	60000(75)	200000(250)	1.0	0.70
			0.35	55040(68.8)	260000(325)	0.7	0.70
	Hot rolled tape		4.5-20	30000(37.5)	100000(125)	1.6	0.70
	Hot forged bar		20-100	30000(37.5)	100000(125)	1.6	0.70

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